Signs of CLD:-

- **Hand** → clubbing, palmar erythema, Dupuytren's Contracture, Flapping Tremor, leuconychia.
- **Face** → jaundice, wasting, parotid enlargement & xanthelasma
- **Chest** → spider naevi (>4 Allowed), Gynaecomastia & ↓ axillary hair
- **Abdomen** → shrunken liver, Ascites, Caput medusa, H.S.M
- **Lower limb** → edema & Testicular Atrophy.

Signs of Decompensated liver disease:-

- Ascites
- Jaundice
- Encephalopathy

Complications of CLD:-

1. Hepatic encephalopathy:- (precipitating factors)

P.P. factors • Diuretics, GI bleeding, vomiting, infection, Surgery, paracentesis & Electrolytes Imbalance

• Management:-
- Stop Alcohol
- Treat P.P. factors.
- Laxative.

2. GI Bleeding (Varices, Congestive Gastropathy & Coagulopathy).

Diagnosis Confirmed (Endoscopy)

- No varices → Repeat endoscopy every 3-4 year
- Grade I → Repeat every year
- Grade II or III → Propranolol 80-160mg/day
- if propranolol intolerant → Band ligation

Management of Bleeding varies:-

① Resuscitate ② BL. Transfusion. ③ Endoscopy sclerotherapy ④ octreotide
⑤ Endoscopic ligation ⑤ Ballon Tamponade ⑥ TIPS

* Transudate or Exudate *

S.A.A.G

More than 1.1

- Transudate
  - CLD
  - CHF
  - CRF
  - Myxoedema
  - Meigs Syndrome.

Less than 1.1

- Exudate
  - Malignancy
  - Infection
    - TB

3] Ascites:

** Causes of Ascites in CLD
- portal HTN (Cirrhosis)
- hypoalbumn
- SBP
- Malignant ascites.

** Managment:
- Salt restriction (< 2gm/day)
- Spironolactone upto 400mg daily
- Lasix upto 120mg daily
- Ascitic Tapping. (Serial)
- TIPS.

• Fluid Restriction if S. Na+ <125mm

4] S.B.P:

•• Considered in any patient with Ascites who deteriorated suddenly
•• Common organisms: E.Coli, Klebsiella & Strept.
••• Diagnosis → Ascitic Tap ~~Neutrophils~~ > 250mm2.
• Treatment:
A] prophylaxis in high risk patient:
(↓ Alb, Congestive, ↑ Ascitic Albumin).
Norfloxacin 400mg daily till Transplant.
B] Acute management:
- Ceftriaxone 2gm I/V BD
- Tazocin 4.5gm I/V 8h } Till CLS result

5] Hepato-Renal syndrome (H.R.S):

•• Rapid deterioration of K.F.T in patient with Cirrhosis or fulminant Hepatic failure (Type I)
•• if Associated with Ascites (refractory) (Type II).
••• Treatment:
Hepatic Transplantation

6] Hepato-Cellular Carcinoma:

- Diagnosis: US, CT & α fetoprotein.

7] Hepato-pulmonary Syndrome (H.P.S.)

(platypnea).

** Poor prognosis in liver Cirrhosis **

... child-Pugh score:

	1 point	2 points	3 points
• T. Bil. (mg/dl)	< 2	2-3	> 3
• S. Albumin (gm/dl)	> 3.5	2.8-3.5	< 2.8
• INR	< 1.7	1.71-2.3	> 2.3
• Ascites	None	mild	Moderate or severe
• Encephalopathy	none	Grade I-II or suppressed with ttt	Grade III-IV or refractory

Points	class
5-6	A
7-9	B
10-15	C

** The clue in abdominal Qs with organomegaly **

** splenomegaly or splenectomy **

* with signs of CLD
  - CLD with portal HTN

* No signs of CLD
  - with lymphadenopathy or no
    - No LN
      - mild to moderate
        - early CLD
        - lymphoproliferative
        - myeloproliferative
        - Infiltration (Amyloidosis)
        - Metabolic
      - Huge spleen
        - CML
        - Myelofibrosis
        - Kala Zar (leishmaniasis)
        - Malaria.

yes
- H. Anaemia
  - with LNs
    - lymphoproliferative } + Pallor
    - Myeloproliferative
    - Infection (T.B, HIV)
    - Inflammation (Sarcoidosis)

with (Signs of H. Anaemia)
- Pallor, Jaundice
- prominent mandible
+ LN

- Dry Tap → BM
- Tear drop.

Causes of Hepatomegaly in Thalassemia.

1. Extra-medullary hematopoiesis
2. Iron over Load.
3. Infection

** Thalassemia **

F. Hb	HbA2
(Major)	(Minor)

- patient clinical features of Thalassemia
  - Pallor.
  - Jaundice
  - prominent maxilla.
  - ± LN

Complications of Thalassemia:

1. Anemia
   - HF
   - stunted growth
2. Pigmented G.B stone
3. Infection
   - due to Repeat Bl. Transfusion
   - Encapsulated org. in case with splenectomy.
     - Meningococci
     - H. influenza
     - pneumococci.
4. Iron overload. may affect
   - Liver, spleen
   - Heart
   - Endocrine gland (specially pituitary)
5. Complication of iron chelating agent.
   - Corneal opacity.
   - Agranulocytosis
   - Deafness
   - R.F
   - Arthropathy.
6. Bone deformit[y]

* Investigations for Thalassemia. *

A] Basic

- CBC → Anemia, Agranulocytosis
- BL. film: Target cell, Holly jow bodies (splenectomy)
- LFT with Albumin & T. BiL
- Skull x-ray → hair on end appearance.
- K.F.T

B] Diagnostic

- evidence of hemolysis
  - LDH
  - T. BiL
  - Retics
- Hb electrophoresis
  - F. Hb (Major)
  - HbA2 (Minor)
- Genetic test

C] Complication.

- Iron study (iron overload).
- pituitary scan (iron deposite).
- alpha feto protein (HCC)
- Hepatitis screen (HBV & HCV)
- Abd U/S.

* Non pharmacological

- PE, PC
- Vaccinations:
  - HBV if surface Ab (-ve)
  - seasonal influenza yearly
  - pneumococcal 3-5 years
  - (1st splenectomy)
  - H. influenza & meningococcal

splenectomy: pneumococcal, H. influenza & meningococcal on 2 (2 week) pre-op

*** Wilson disease:- (Autosomal Recessive)

* it is Genetic disorder characterized by:
  - elevated Copper stored in various body tissue (liver, brain, cornea, etc)

C/P:
- Hepatolenticular degeneration (Kayser Fleischer ring)
- Chronic Liver disease
- Neuropsychiatric disorders
- Renal tubular acidosis
- Cardiomyopathy

*Diagnosis:
- Liver function test
- MRI brain
- Serum ceruloplasmin & copper level estimation
- Liver biopsy
- Genetic testing

Tt:
- Diet — no pharm: low copper containing, remove copper cook ware
- Medication: chelating agent
  - Trientine
  - D-Penicillamine
  - Zinc supplement
  - Liver transplant

Treatment of Thalassemia

* Definitive treatment

- BMT
- Repeat BL. transfusion. Target Hb 10 g/dL to prevent extramedullary hemopoiesis.
- Genetic Therapy under trial

* treat Complication

- Iron chelating agents
- splenectomy

Indications:
1. Hypersplenism — ↑ frequent BL. transfusion > 250 ml/kg/year
2. Huge spleen causes pressure symptoms.

Types of Iron chelating Agents

Desferrioxamine (Desferal) (IV or SC)

infusion over 8 hours for 4-6 night / week

*** Hemochromatosis:-

Iron overload → deposit in:
- bronze or gray color skin
- heart → abnormal heart beats, feeling tired
- liver → CLD → cirrhosis
- pancreas → DM
- bone → joint pain (arthritis)
- erectile dysfunction.

Investigations

- T. sat
- S. ferritin
- LFT
- Liver biopsy
- MRI

Tt:
- non pharm → PE/PC
- pharm: phlebotomy (venesection)

Indications of Hepatic Transplant

Acute Hepatic failure

Paracetamol induce

- pH < 7.3 24hr after ingestion
- or
- All of the following:
  - PT > 100
  - Creat > 300 mmol/L
  - Grade III, IV encephalopathy

Non paracetamol induce

- PT > 100 or
- 3 out of following
  1. Drug induce LCF
  2. Age < 10 > 40
  3. > 1 week from jaundice to encephalopathy
  4. PT > 50
  5. Bili > 300 mmol/L

Chronic L.D

- Alcoholic
- PBC
- Wilson
- α_1 AT
- P.S.C

Investigations of C.L.D

A] Basic

- CBC
- LFT (include Alb, INR)
- KFT
- U/S Abdomen

B] Diagnostic

- HCV Ab (PCR)
- HBs ag (PCR)
- Autoimmune studies → ANA, ASMA, LAKMA & SLA
- AMA → P.B.C
- Iron study → hemochromatosis
- Copper, ceruloplasmin → wilson
- Liver biopsy

C] Complications

- Endoscopy
- α fetoprotein
- U/S
- Ascitic Tapping

Treatment of C.L.D

A] Nonpharmacological

- Stop Alcohol
- PE
- PC
- Nutritional support
- & Vaccination
  - HAV if IgG negative
  - HBV if Bs Ab negative

B] pharmacological

- HCV (new oral antiviral) Sofa + Daclatasvir
- if Cirrhosis + → Ribavirin
- HBV
  - Entecavir, Tenofovir
- Autoimmune.
  - steroid + Immunosuppressive.
- Hemochromatosis
  - venesection
- wilson → chelating agent
- .... liver Transplantation

C] Complications

(Mentioned Before)

** Renal Transplantation **

* Causes of CKD

... young
- GN
- Infection
- Reflux
- Drugs
- DM
- Congenital

... old
- DM
- APCKD
- HTN
- Analgesic
- Infection
- Drugs
- GN.

* Complication of Renal transplant :-

A] Early :- Surgical.
Infection
Rejection < ~~Hyperacute~~ Acute

B] Late :
- rejection
- infection
- recurrence of my Causes.
- R.A. Thrombosis
- R.V Thrombosis.
- Arterial stricture.
- leak.
- Drug (Immunosupp) Complications.

Infection Cancer Hypertrichosis DM HTN

Gum hyperplasia - post transplant lymphoproliferative disorder.

* Renal Case in Abdomen:

① ESRD on HD

Clinical finding

- may be normal abd. or.
  PCKD. (on Examin Abd).
- signs of active RRT (fistula, Catheter)

② Transplanted kidney

Clinical finding

- Abd. Scar, abd mass.
- signs of previous RRT (fistula,).
- signs of Immunosupp. Complications.

③ Renal single mass:

- Polycystic kidney
  - AD PCKD
  - AR PCKD
  - Tuberous sclerosis
  - Von Hippel Lindau
- Renal cell Carcinoma
- Hydro-nephrosis
- Adrenal mass.
- Retroperitoneal mass

Chest Examination

A] General:-

- **LL:-**
  - → edema. ← Cor pulm, malnutrition, Hyp Alb.
  - → inspect chest.

- **U.L:-**
  - clubbing → ch. Toxemia, Fibrosis & Bronchiectasis (T.B & Cancer)
  - Fine Tremors:- → B_2 agonist
  - Flapping Tremors:- → CO_2 retention.
  - Cyanosis
  - Wasting & Dubutyran contracture. → Cervical rib / → Pancoast Tumor
  - Joint deformity:- → R.A,
  - Skin → Rich skin, dermatomyositis, syst. sclerosis
  - **RR**

- **Neck:-**
  - elevated JVP → Cor pulmonale.
  - Trachea. → C.S.N.D → ⊕ } O.A.D
    → Tuge → ⊕
    → Central or not

- **Face:-**
  - eye → Pallor, Jaundice & Red eye (2ry polycythemia)
  - lips → Telangiectasia (as case of lobectomy or pneumonectomy)
  - Mouth → Cyanosis (Tongue).
  - Parotid gland → enlarged + lung fibrosis } → Sarcoidosis

B] Local:-

- Front
- axillary
- Back

- inspect → expansion, scar or deformity.
- palpation → expansion, Apex of heart, and HS
- Percussion →
- Auscult.

* Investigation for chest Cases *

A] Basic :-

- CBC, LFT, KFT, ESR & CRP.

B] Diagnostic :-

- CXR
  - → O.A.D → Wide ICS, flat diaphragm, Ribbon shape heart
  - → Fibrosis → Reticulonodular shadows.
  - → Bronchiectasis → Tram-like appearance.
- HRCT
  - → O A D → Same as CXR + Bullae (pneumothorax)
  - → Fibrosis → Ground glass appearance.
  - → Bronchiectasis → Signet ring appearance.
- P.F.T & Transfare factor (DCLCo)
  - O A D → obstructive patterne. — DCLO
    - ↓ Bronchitis → Normal
    - ↓ emphysema → ↓
    - ↑ B. Asthma → ↑
  - Fibrosis → Restrictive + ↓ DCLO
- Sputum CLS, A.F.B & Z-N stain.
- Broncho-alveolar lavage (BAL)
- Biobsy either → Bronchoscopy, V.A.T (Video-Assisted-Thoracoscopy)
- 6 minutes Walk Test → assess ~~lung function capacity~~ by O_2 sat (on walk).
- Contrast CT :- → if Suspected Cancer or Cavity
- Sweat test :- → if Suspected cystic fibrosis

** Bronchial breath **

with (+) whispering

- Scar
  - pneumonectomy
  - lobectomy
- No Scar.
  - Crackles
    - Fibrocavitary
      - Tracheal shift to same side.
    - Consolidation
      - Trachea central.
      - (Infection, Infarction & Cancer) Pneumonitis
  - No crackles.
    - Collapse
      - dullness
    - Cavity
      - Resonance

** Dull Percution

(No Scar)

- Crackles
  - breath sound
    - Bronchial.
      - Fibrocavity
      - Collapse.
    - Vesicular
      - Bronchiectasis
        - Coarse crackles can be altered by Cough
        - patient always coughing
      - Fibrosis
        - fine inspiratory
        - not changed.
- No crackles.
  - pl. Thicking
    - normal air entry
  - effusion
    - diminished or absent
  - Collapse
    - absent air entry

	Pneumonectomy	Lobectomy
1- chest wall	- Flattening of affected side.	- Localized deformity
2. Chest expansion.	- absent	- Reduced
3- Trachea position.	- deviated to the same side.	- Deviated to same side in upper lobectomy.
4- Breath sound.	- absent.	- Near normal (due to compensatory emphysema).

Causes of Thoractomy:-

- operation of old T.B
- uncontrolled hemoptysis.
- lung Cancer (non small cell)
- lung abscess not responding to treatment
- lung reduction surgery
- Bronchiectasis with recurrent hemoptysis

Lung Fibrosis.

(BREAST)

A] Apical.

- Berilliosis, silicosis
- Radiation.
- E.A.A
- Ankylosing spondylitis.
- Silicosis
- T.B

B] Basal.

- Asbestosis
- All C.T.D except Ankl
- IPF
- Recurrent chest infection
- Drugs:
  - Amiodarone
  - Methotrexate
  - Nitrofurantoin
  - Bleomycin Cold
  - Busulfan.
- Rh. Arthritis
- SLE
- S. Sclerosis
- M.C.T.D
- Dermatomyositis
- Polymyositis

Causes of unilateral basal fibrosis

- Infection
- Infarction.
- Cancer
- Occupational.
- Drugs.

Investigations:-

A] Basic: CBC, ESR, CRP, ABG

B] Diagnostic:

- CXR → - Honeycombing
  - Reticulonodular shadows.
- HRCT → Ground Glass

- pulmonary Function test with DLCO
  Restrictive with ↓ D.C.L.O
- Immunological:
  ANA, AWCA, Anti-G. BM & Immunoglobuline level
- Serum ACE level.

C] For Complications:-
ECG, Echo → Cor pulmonale

** Mangment of pul. fibrosis:-

A] Non pharm.
- stop smoking.
- P.R.P
- Good Nutrition
- Vaccination

B] pharmalogical:-
- Treat the Cause or stope Causing drug.
- ~~I.E.O.T~~ —
- Immunomodulator (Pirfenclone) if F.V.C > 50%
  Recheck after 1y ers. & stop it
  ↓ F.V.C < 50%.
  ↓ F.V.C reduced > 10% ⇒ start vd
- L.T.O.T Indications:
  @ PaO_2 < 7.3 or
  PaO_2 7.3-8 with
  → Cor pulmonale
  → 2ry polycythemia
  → pul. HTN
  → Nocturnal Hypoxemia

C] Surgical:-
Lung Transplantation

* Causes of FibroCavity or Cavity :-

- Infection
  - T.B (Apical)
  - klebsiella
  - staph
- Infarction
- lung abscess
- Cancer (Squamus cell).
- Vasculitis

* Complication of lung Cavity :-

1- Hemoptysis
2. Aspergilloma
3. Recurrent infection
4. pleural pathology
   - pneumothorax
   - Hydrothorax
   - pl. effusion.

Bronchiectasis

Causes of bronchiectasis:

1. Congenital: Immotile cilia syndrome
   Kartagener's syndrome.
   Cystic fibrosis
2. Childhood infection:
   measles
   Pertussis
   Foreign body.
3. Immundeficiency:-
   Hypogammaglobulinemia
   Allergic Aspergillosis.
4. T.B.
5. Malignancy.

Common organisms causes recurrent infection:-

- Pseudomonas
- Hemophilis influenza.
- Streptococcal
- Borkholderia.

** Investigation for bronchiectasis :-

* Basic :- CBC , LFT, CRP, ESR.

* Diagnostic :-

- Laboratory :- - Sputum C/S & AFB & Gram stain
  - Immunoglobulin
  - Na+ sweat test
  - Genetic screen for C.F.

- Radiology :-
  - CXR → Tramlines shadows.
  - HRCT → signet ring

- special test :-
  - Bronchoscopy for suspected Cancer.

** Management of Bronchiectasis :-

A] Non Pharmacological :-

- **** Stop Smoking.
- pulm. Rehabilitation (including postural drainage)
- Nutritional support
- Vaccination
  - annual influenza.
  - H. influenzae (yearly)
  - pneumococcal (3-5y)

B] Medical :-

- Antibiotic for exacerbation
- prophylactic (long term) antibiotics
  - Tobramycin
  - Inhaled Colistin
- Bronchodilators.
- Inhaled steroid.

C] Surgical :-

- For localized disease.
- As lung reduction Therapy.

Pleural Effusion

A] Exudate

- Infection
- Infarction (Embolism)
- Inflammatory (SLE, Rheumatoid)
- Infiltration (neoplasm)

B] Transudate

- Cardiac failure
- Renal failure
- C.L.D
- Meigs syndrome.

Light's Criteria for Exudate

pleu fluid / serum protein. > 0.5

PL. fluid / serum LDH > 0.6

PL. fluid. LDH > 2/3 of serum LDH.

Obstructive airway dis.

* B. Asthma *

- Reversible > 20%
- P.F.T obstructive with ↑ DLCo
- ↑ fraction Nitrous oxid in exhaled air.

* C.O.P.D *

(ch. Bronchitis & emphysema)
Irreversible < 12%
obstructive P.F.T
↓ DLCo in emphysema.

*** Complications of O.A.D :-

- Pneumothorax.
- Cor pulmonale.
- Recurrent infection
- 2ry polycythemia.
- Resp. failure.

** Manyment of C.O.P.D :-

A] Non pharmacological:

- stope smoking.
- P.R.P
- Nutritional support.
- Vaccinations: → seasonal influenza.
  → pneumococcal 3-5 yrs.

B] pharmacological:

S.A.B.A or S.A.M.A ← ① During attacks
- Bronchodilator, Antibiotics.
- steroid
- O2 therapy
± Admission.

② In between attacks:-

③ L.T.O.T

Indications:-

- $PaO_2 < 7.3$

or - PaO_2 7.3 - 8 with

Corpulmonale, 2ry polycythemia,

Pulm. HTN & Nocturnal hypoxia.

(stop smoking)

c] Surgical:-

- Lung Reduction Surgery,
- Bullectomy
- Transplantation

(not Cr. N examin.)

** Neurological Examination steps **

1. Screen Exam. ارفع إيدك، ارفع رجلك
   Then procedure to weakness.
2. Tone If hypotonia (fasciculation).
3. Power
4. Reflexes if Hyperreflexia → pathological → clonus.
5. Co-ordination: → لو عملها وهو مغمض أثرها
   to R/o sensory lesion.
6. sensation superficial & deep
7. Cerebellar UL & LL weakn. or eye (Nystagmus).
   Finger to nose. or finger to finger.
8. Gait → at end.

*Sensory level

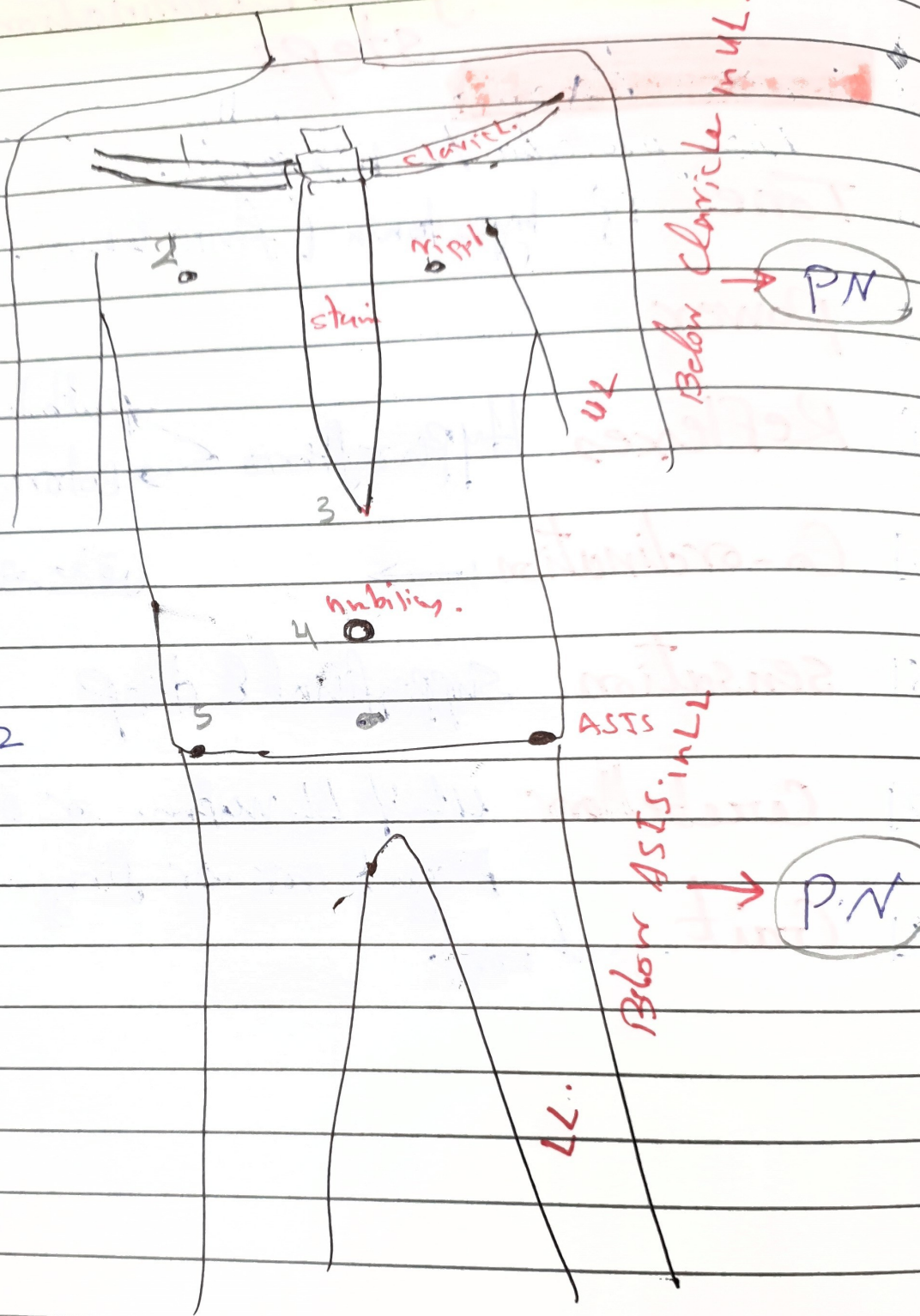
① • clavicl → C_4

② • Nipple → T_2

③ Xypho → T_8

④ Umbil → T_{10}

⑤ Suprapubic → T_{12}



Types of neurology lesion

A] UMNL.

① Δ tract lesion.

- Hypertonia, Hyperreflexia & up going plantar.
- Weakness:

D>P	Abd>Add
upper limb	Ext.> Flex.
Lower limb	Flex > Ext.

** if patient has Hypotonia hyporeflexia with up going planter it mean either:
- Shock stage
- Combined lesion.

② Extra Δ lesion:-

- Bradykinesia.
- Rigidity
- Static Tremor.
- Monotone speech.
- Gait (short stepped) shuffling
- Blepharospasm.

③ Cerebellar:-

- ~~Nystagmus~~
- Dichodokinesia.
- Intention Tremor.
- Dysmetria
- Rebound phenomenon.
- Heel to Chain test.
- Gait

** If UL Examination showed lesions of UMNL →

Ask to do planter Reflex.

Complications of P.N

- Disability.
- Neuropathic ulcer.
- charcot joint
- Complication of treatment

Diagnosis of P.N

A] Basic: - CBC → Macrocytic B12 def
LFT → Alcohol
KFT → Uraemia
ESR, CRP → Infection

B] Confirmation:
N.C.S → Demyelination → Delayed velocity
↳ Axonal → ↓ Amplitude

C] For Causes:
- RBS → DM
- Vit B12 level → pernicious Anaemia.
- ESR, CRP → Infection
- PANCA & C-ANCA → Vasculitis

Treatment of P.N

A] Non pharmalogical:
PE, PC, PT, OC & Foot Care

B] Pain Control:
Gobapantin or pregabalin —not improve→ Carbimazepin or Amitryptatin
... Duloxtein med only & if no response → stop

C] Complications: charcot joint → Cast & Immobilize for 3-6

B] LMNL

- Weakness D>P Abd>Add
  Ext.>Flex.

1] A.H.C. (pure motor with normal sensation)

- MND (fasciculation) → Prog. Ms Atrophy (Pure LMN)
- Polio → (Pure LMNL) → Amyotrophic Lat. Scl. (Mixed UMN & LMN)

2] Roots:-

Asymetrical sensory loss (Multiple root lesion)

••• if you find root lesion ask to **exam the back**

3] Peripheral nerves:-

A] Pure motor. PN B] Sensory PN C] Both.

- G.B.S
- CIPD
- AIP
- Lead poisoning.
- Dapson.
- Diphteria

(Gloves & stocking) ± deep sensory loss

** Causes of PN

- H.M.S PN
- DM
- Uraemia
- Infection (HIV, Diphteria ... etc) Leprosy
- Drugs Dapson, INH, Flagyl, Vincristin
- G.B.S
- Alcohol.
- B12 deficiency
- Vasculitis
- Toxins lead, Arsenic, Organophosphorus

4] N.M Junction & Muscles (Pure motor).

- Weakness P>D (except M.D → D>P) → weak hand grip with delayed relaxation
  Add>Abd

••• If Add>Abd (weakness) → your diagnose is Ms. disease

** Paraplegia with UMNL **

D.D

UMNL △

① with intact sensation: (Pure motor).

- MND (Age > 35) → Amyotrophic L.S / Progressive Ms. Atrophy
- Asymmetrical → M.S or Vasculitis
- Symmetrical

N.E. to examine UL for cerebellar signs.

Tell exam I'd like to:
- Take family history → H. spastic paraplegia.
- Travel history → Tropical "
- Do fundus exam → Parasagittal meningioma
- C. palsy (young)

UMNL △

② with PN only → Combined lesions

UMNL

③ with PN & Dorsal Columnar lesion (Deep sensation):

- S.A.C.D → B_{12} def. & Vasculitis
- M.S + PN

UMNL △

④ + PN + DC + Cerebellar:

- F. Ataxia
- MS + PN.

UMNL △

⑤ with Sensory level:- (Means spinal cord lesion).

Ⓐ Loss All modalities (4 Ts + D)

Transverse Myelitis, Trauma, Tumor, T.B & Disc.

+ Urine, back pain & Sphincter

Paraplegia with sensory level.

Spastic

↓

precipitancy of micturation

Flaccid..

(Acute) Shock)

with urine retention

(B) lost superficial only (intact Deep):

- Chronic → Syringomyelia, Tumor, T.B, Infection
- Acute → A.S.A.O or Trauma.

(C) lost Deep (D.C) & intact superficial:

- Tabes Dorsalis
- S.A.C.D → But urgent no P.R (D.C + Δ + PN)
- Vascular myelopathy

Transverse myelitis T.M

Paraplegia with Sensory level

Causes:

- 60% Idiopathic.
- Post-infection → Bacterial T.B, $, Brucella
  → Viral HS, HZ, CMV, HIV
- Inflammatory post vaccinations
- Vasculitis

Investigations:

A] Basic

CBC, LFT, KFT
ESR, CRP

B] Diagnostic

L.P

- Protein ↑ (Immunoglobulin dissociation) → T.M.
- Lymphocytosis → T.B

MRI (Brain & spinal).
Inflamed cord or (Demyelinated plaque in M.S).

Treatment :-

A] Non pharmacological :-

- M.D.T, P.E, P.C, P.T, O.T, Psych.T
- Cone of 3 Bs (Bowel, Bladder & Bed sores).

B] pharmacological :-

- Sytemic steroid ±
- Plasmapheresis

*N.B In Acute presentation of Paraplegia: emergency based.

1. Immobilization
2. Steroid.
3. MRI.

Complications :-

1. Complications of disability (Bed ridden).
   - D.V.T, Bed sores, recurrent UTI & Constipation
2. Depression.

*** Muscles disease ***

... Weakness

- Add > Abd (characteristic)
- P > D (except M.D D > P)

- Waiting face, Normal eye → 1- Fascio-scapulo humoral (Aut. Dominant)
- Waiting face, ptosis → M.G
- Normal face & eye movement, scapula → ① - Becker (x-linked) ② - Limbic girdle (Aut. Recessive) ③ - Acquired
- M.D (Aut. Dominant): weak handgrip with delayed relaxation

Character

- ptosis
- early baldness
- Cataract
- Prominent Maxilla
- check RBS - DM
- ECG may ← A. Block have pacemaker
- Hypotonic face (weakness & wasting)

Investigations

- Genetic test.
- ECG, Echo
- R.B.S.

N.B : Any patient with Ms disease.

ask to Do :-

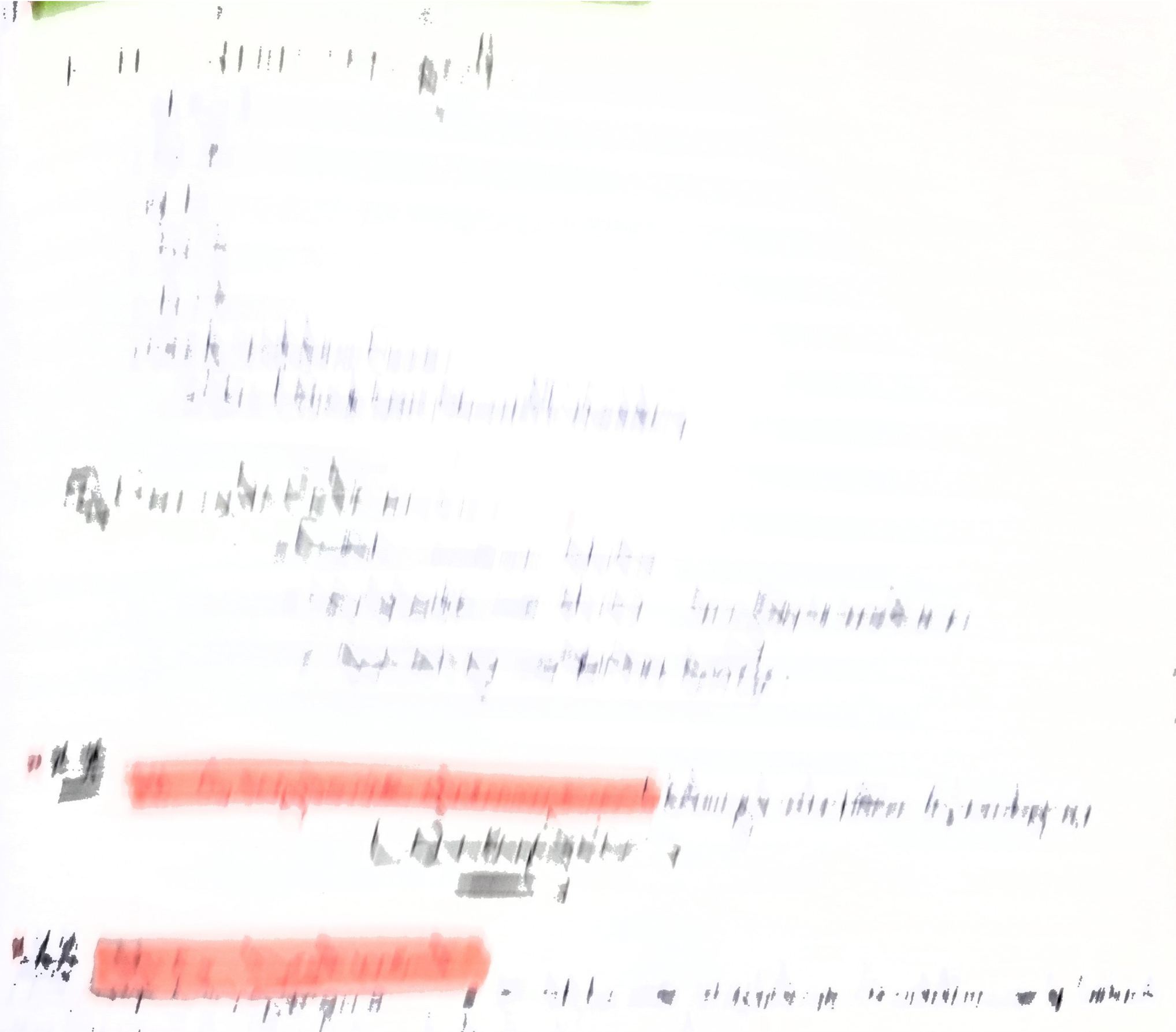
1. Gower signs.
2. Winging of scapula.
3. Exam the heart & pulse.
4. Ask about swallow
5. F.V.C

... Investigations.

A] Basic
- CBC
- LFT
- KFT

B] Diagnostic
- Ms. Enzymes: CPK, LDH, Aldolase.
- E.M.G
- Ms biopsy guided by E.M.G
- Genetic test.

C] for Complication
- ECG & Echo
- RBS
- F.V.C



* Treatment of Ms. disease :-

A] Non pharmacological :-
- M.D.T
- P E
- P C
- P T
- O.T
- Bed ridden care.
  3 Bs (Bed Sore, Bowel & bladder)

B] Complications :-
- DM → in M.D
- H. block → M.D by Pacemaker.
- DCMP → Baker disease.

** Myotonic phenomenon (delayed relaxation of handgrip).
(phenytoin).

*** M.G treatment
- CT chest (Thymoma)
- EMG → repetitive stimulation → ↓ Contra
May Diagnosis by blood test showed
- Acetyl choline receptor Ab or
- Ms specific Tyrosine kinase Ab (MuSk).

Medication :- Mestinon (pyridostigmine)
- Immunotherapy (Azathio (Imuran), Cyclosporin (Neoral), etc).
- plasmapheresis
or Ig

Surgical :- if thymoma → (Thymectomy)

Hemiparesis

**Causes of hemiparesis:

- Thrombophilic
  - Embolism
  - Thrombosis
  - Hge.
- M.S
- Vasculitis
- Encephalitis
- S.O.L (Tumor or Abscess)
- Trauma.

**Clinical Finding:

- Weakness of both on same side UMNL
  - UL → Abd > Add, Ext > Flex
    Dist > proximal.
  - LL → Same except Flex > Ext
- Hypertonia (spasticity) ± clonus.
- Hyperreflexia ± pathological reflexes (Patellar, Adductor)
- Ext. plantar (upgoing)
- Circumduction gait
- ± Impaired sensory modalities.

**look around patient searching for walking Aid.

* Localization of site:

1. **Cortical** : Monoplegia , Coma or Confused , Convulsion
   XX Aphasia , agraphia & Hemianopsia.

2. **Capsular**:
   Paraparesis ± paresthesia (7 & 12)
   ± UMN facial lesion, hypoglossal on opposite side.

3. **Brain stem**: (Crossed hemiplegia)
   Crural LMN on opposite side of lesion.
   - **Mid brain**
     Oculomotor (3) & Trochelear (4)
   - **Pons** (5) Trigmenal. (8) Vestibulochelear
     (6) Abducent
     (7) Facial (LMN on opposite side) (All face)
     Same side to lesion
   - **Medulla**
     (9) Glosopharyngeal.
     (10) Vagus
     (11) Accessory
     (12) Hypoglossal.
     on same side to lesion.

4. **Spinal Cord above C_2 (Hemisection)**
   - Brown-Sequard syndrome.

At the level.
- Ipsilateral: Weakness
- ~~Ipsilateral loss of All~~ sensations

Below the level.
- Ipsilat. ~~weakness~~
- Ipsilat. ~~deep sensory loss~~
- Contralat. superficial sensory loss
- Tone ↓ on both sides

Hgic Stroke

- Conservative follow up.
- Decompression if there is midline shift
- Treat Causes if present.

Stroke with new AF

Echo → No structural H.Diseases → (Valve replacement)
1st ASA, Heparin + Rate Control.
Then 2 weeks later → Anti coagulation.

Stroke in patient has valve replacement on Anticoag.

1st → urgent CT Scan

Hgic Stroke

(Cardiology + Neurology) M.D.T (according to risk/Benefit)
if Hgic → Stop & ↓INR to normal by prothrombin Comp

Ischemic Stroke:

M.D.T

- if risk for Transformation to Hge (Big infarct) stop anti-Coag → give Antiplatelet 1 week then resume
- if No risk for Transformation (small).
  Continue & Increase target INR

** Investigations for hemiplegia:-

- A] Basic:- CBC, LFT, KFT

- B] Diagnostic:-
  - CT brain → To R/o Hge.
  - MRI → Ischemic stroke & S.O.L.
  - MRV → to R/o Sinus Thrombosis
  - MRA → R/o Hge & Aneurysm.

- C] For Risk factors:-
  - Lipogram
  - HBA1c
  - ECG
  - Echo
  - Thrombophelia screen.
  - Immunology for vasculitis (P-ANCA & C-ANCA).

* Treatment of hemiplegia:-

A] Non pharmacological:- PE, PC, PT, O.T, Rehabilitation, care of Bowel, Bladder, Bedsores & swallow.

B] Pharmacological

* Acute Ischemic stroke *
↓
- ABCD
- Urgent CT scan
- Thrombolytic (window 4.5 hr)
- Thrombectomy (window 6-12 hr).
- ASA 300mg oral. outside window —2wks→ Reevaluation
  - Risk factor (clovix + statin)
  - No risk factor: ASA only 75mg + TTT causes

(Admit to stroke unit)

* - Anti-coagulant in case of S.S.T or stroke in evolution.

* 2ry prevention *
↓
- ASA 300mg 2week —then→ 75mg
-

C] Surgical:-
Carotid endarterectomy → if stenosis 70-99% without permanent neurological disability after 2weeks.

Parkinson's disease

it is a clinical diagnose

- Bradykinesia + >one of → slow count finger
- Rigidity (lead pipe or Cog-wheal)
- Tremor.
- postural instability (wide based gait)

*** if suspected [A] Do (Examine) = speech → staccato or Monotonous. (Ask pt about Full name & Address)

- Hand writing
- Gait → wide base & difficult to turn back.
- syncinesia → repeat supination & pronation on the normal hand → ↑ Tremor on affected one
- Rebound phenomenon.
- Nystagmus & intra-nuclear ophthalmoplegia.
- hill to shine test.

[B] Ask to do:-

- Glabbeler signs
- M.M.S.E
- check Handwriting.
- BP (supine & standing)
- Supra-nuclear Gaze.
- plantar reflex.

Complications of parkinsonism:-

- Disability
- Depression.
- Dementia
- Drug Complication :- Tolerance (end dose, on & off phenomenon)
  - Dyskinesia.
  - Memory change.
  - Hallucinations
  - Nausea & Vomiting.
  - Postural hypotension.

** Diagnosis :-

it is aclinical diagnosis But if less then 50 yrs old Do → screen for ~~Wilson disease~~.

... Indications of MRI :-

1. Vascular Parkinsonism.
2. Parkinson plus.
3. Suspected S.O.L.
4. To Rlo Normal pressure Hydrocephalus.

... SPECT study :- it differentiate between parkinson & Essential Tremor

shows ↓ Dense area of substantia Nigra.

** Mangment of parkinson disease:-

A] Non pharma:- Rehabilitation, PE, PC, PT, O.T, Social & psychological support.

B] Medical: according to main Complain.

... if Tremor → ~~Anticholenergic~~

**New Guidline..

-- If Rigidity → with disability: Less dopa & C.
(Regardless Age).

→ without disability: old → L.Dopa & C.D

→ Yong → Dopamine agon

- if Rigidity →
  - a) with disability → Dopamin agonist (Reprinole (Bromocriptine, Pramipexole))
  - b) disability → L-Dopa / Carbi-dopa.

** Adjuvent Drugs:-

Apomorphin | MAOI → selegilline, Rasagilline. | C.O.M.T → Entacapone, Tolcapone.

C] Surgical:-

- Deep Brain stimulation (D.B.S)
- Thalamectomy.
- pallidectomy

** F. Ataxia **

3 Ps + C

- Pyramidal
- posterior Column.
- P.N
- Cerebellar.

** Multiple sclerosis M.S **

** Clinicaly:-

C ↓ Cerebellar — C ↓ optic — P ↓ pyramidal — D ↓ Lesions. Dorsal Column.

** Investigations:-

A] Basic:- CBC, LFT & KFT

B] Diagnostic:-

- MRI ⟶ Peri-ventricular plague.
- L.P ⟶ oligoclonal band.
- V.E.P ⟶ Delayed Response. (Visual Evoked potentials)
- A.E.P ⟶ Delayed Response. (Auditory Evoked ,,)

** Mangment:-

A] Non pharma

- PE, PC, PT, OT
- Social & Psych. support
- Care of Bowel, Bladder & Bedsores.

B] pharmacological

① Acute attack:-
- pulse steroid 500-1000mg IV daily for 3-5days.

② Between attacks:-
- Natalizumab (Injection) or
- Fingolimid (oral) 1st dose on monitor side effect Bradycar

N.B

if patient on Interferon or Glutamer Acetate & Controlled. ⟶ Continue on same.

** Valvular heart Lesions **

*** Mitral stenosis (M.S)

* **Causes:**
  - Rh. HD
  - Atrial Myxoma.
  - Congenital.
  - Carcinoid syndrome
  - Methergide therapy.

* **Symptoms:**
  - S.O.B
  - Palpitation
  - Cough
  - hemoptysis

* **Clinical Findings:**

a) **Non Auscultatory**

- ± AF
- ± ↑ JVP
- ± Tapping apex
- ± (Lt) parasternal heave
- ± palpable P_2
- ± Tender pulsating liver.
- Low volum pulse.
- ± Diastolic thrill on apex

b) **Ascultatory:**

- Accentuated S_1
- ~~± pansystolic murmur~~
- mid-diastolic rumbling murmur best on apex
- ± opening snap.

★ Complication of M.S.:

- ⑮ Atrial dilatation
- Thromboembolism.
- pulmonary Congestion
- Endocarditis
- AF
- pulmonary HTN
- Rt v. failure.

★ signs of Severity of M.S.:

Clinical:

- Early opening Snap
- ↑ duration of murmur.
- pul. HTN.
- Low pulse pressure.
- Graham. steel murmur.

ECH

*valve area → Mild > 1.5 Cm^2
→ Moderate 1 to 1.5 Cm^2
→ Sever < 1 Cm^2

★ Indications for surgery:- (Replacement)

① pulmonary Congestion
② pulmonary HTN
③ Hemoptysis
④ Recurrent Thromboembolism Despite anticoagulation.
⑤ M. valve SCor (Mobility, Thickness, Calcification & sub. valvular area.

SCor 4 — 6 — 8 → Replacement
↓ valvoplasty.

if No Contraindications

- L.A Dilatation or Thrombus
- Heavy Calcification
- Double valve lesions (MS/MR)

* Treatment of M.S (not indicated for surgery)

- Diuretics & ACE
- Treat AF
- prophylaxis of I.E. in high risk patient & high risk procedure.

★★★ Mitral Regurgitation :- (M.R)

★ Causes of M.R :-

* Acute *	* chronic *
- MI (Ischemic)	- Rh. HD ← SLE, R.A
- Trauma	- C.T.D ← Ankylosis
- I.E	- Marfan syndrome.
- ~~Pain~~	- Dilated CMP

★ symptoms :-

- S.O.B
- Palpitation

★ Clinical Findings :-

* Non Auscultatory *	* Auscultatory *
- Displaced thrusting Apex	- Soft S_1
- ± AF	- Pansystolic murmur radiating to axilla.
- ± syst. thrill on Apex.	- ± S_3

★ Complications of M.R

- pulm. HTN (Cor. pulmonale)
- AF
- IE

★ Signs of Severity :-

- Thrill
- pulm HTN
- S_3
- shifted Apex
- CHf

★ Indications for Surgery :- (Replacement)

- PHTN
- Pul. Congestion.
- ECHO showed: EF < 60
  LVESD > 45
- IE. not response to treatment.

* Non surgical treatment of M.R.

- Diuretics & ACE to ↓ pulm. HTN
- Treat of AF
- prophylaxis to IE in high risk patient & high risk procedure.

* In Acute MR with Cardiogenic shock:-

1- Na Nitroprusside → ↓ After Load.

2- Ballon pump → ↓ after Load.
→ ↑ Coronary perfusion.

** Signs of predominant stenosis of Mixed M.V lesion:-

- Accentuated S_1
- Non displaced Apex
- Tapping Apex.
-

** Signs of predominant Regurg. of Mixed M.V lesion:-

- Soft S_1
- Displaced apex
- Hyperdynamic apex.
- Thrill.

* M.V.P *

* Causes:-

- Marfan
- Pseudoxanthoma elasticum
- Osteogenesis imperfecta
- Ehler danlos
- HOCM

* clinical signs:-

Mid-systolic click $\xrightarrow{\text{later}}$ M.R

* Investigation:-

ECHO

*** Aortic Stenosis:. (A.S)

* Causes of A.S:.

- Congenital / Bicuspid
- sclerosis / Calcification = Aging
- Rheumatic H.D
- Degenerative
- HOCM.

* Symptoms of A.S:. (D.A.S)

- Dyspnea.
- Chest pain (Angina)
- syncope

* Clinical Findings of A.S:.

Non-Auscultation

- Low pulse volume
- slow raising pulse.
- Narrow pulse pressure.
- Heaving Apex
- ± Systolic thrill on Ao. Area. (2nd Rt ICS)
- ± Thrill over 2nd Rt ICS

Auscultatory.

- ESM on 2nd Rt ICS radiates to neck
- Best heard with expiration with hold breathing.
- ± CHF

* Complications of A.S:.

- CHF
- IHD
- Dysrthymia.
- I.E

EB

* Signs of Severity of A.S:-

- pul. HTN
- Heaving Apex
- Long duration of Murmur.
- pul. Congestion.
- Narrow pulse pressure

* Indications for surgery:- (Replacement)

1- Symptomatic patient (Dyspnea, Angina & Syncope)

2- Asymptomatic patient if:

- with other heart surgery
- Abnormal response of Bp to exercise.
- Non Sustainded V.T
- Echo → Gradiant > 50
  → area < 0.6

pre-op Cardiac Cath.

* Medical mangment of A.S:-

- prophylaxis for I.E
- Treat HF if present.
- Treat Arrhythmia.
- Diuretics. → ↓ pre-load.
- β. blocker → for angina.

*** patient with symptomatic A.S unfit for surgery can be treated by (T.A.V.I) Trans-catheter Aortic Valve Implantation → Tissue valve.

A. stenosis Vs A. sclerosis

- Thrill
- Radiating Murmur to neck

- No Thrill
- Non radiating murmur.

Aortic Regurgitation:- (AR)

Causes of A.R :-

- Acute
  - Dissection
  - Ischemic
  - IE
  - Trauma.
- Chronic
  - Rh. H D
  - Ankylosis spondylosis
  - Syphilitis
  - Congenital
    - Marfan
    - Ehlers-Danlos
    - osteogenesis Imperfecta

Symptoms of AR :-

- palpitation
- S.O.B
- chest pain.

Clinical Findings of AR :-

Non Auscultatory

- Big pulse volum.
- Water hummer pulse.
- Wide pulse pressure
- Visible Carotid pulsation
- pistol shot femoral
- Duroziez's signs.
- Thrusting Apex (Hyperdynamic)
- ± Thrill over Aort. Area.

Auscultatory

- Early diastolic Murmur ↑ with leaning forward with full expiration
- ± Aortic flow murmur.

* Signs of Severity of AR:-

- Duration of murmur.
- Wide pulse pressure.
- 3rd H.S (S_3).
- pulm. HTN
- displaced Apex.

* Mangment of AR:-

• Medical:

- Trent underlying Causes.
- I.E prophylaxis
- ACEIs → for HF
  + Diuretics

• Surgical (Replacement) indications:-

1- Symptomatic (Dyspnea, Angina & syncope).

2- Asymptomatic if:-

- Echo → EF < 50%
  - LVESD > 55
- I.E not responde to Medical Treatment
- other Heart surgery.

So, Cardiac Cath. pre oper.

* Signs of predominent AR of Mixed AV lesion:-

Murmur of AR, Peripheral signs of AR (collapsing, large volume pulse), Displaced Thrusting Apex.

* Signs of predominent A-S of Mixed AV lesion:-

Murmur of AS, Low volume, slow raising pulse, Non displaced heaving Apex

*** Complications of Valve Replacement:-

- **Early Complications:**
  - operation (Surgical) Complications.
  - IE with staph Epidiclimis).
- **Late Complications:**
  - Thrombus & embolization (Anti-coagulant ↓it)
  - Bleeding from over anticoagulation
  - I.E (Staph. Aureus & streptococcus).
  - Hemolysis → (Anaemia & Jaundice)
  - Malfunctioning Valve (Surest signs is absent click)
  - Leakage
  - Dehesence.

** Anti Coagulation for Mech. valves **

- only Warfarin. with target INR 2.5–3.5.
  up to 4 if Associated with AF or previous Stroke.

** In pregnant female:

	* LMWH	* 3month, Warfarin	* 36 weeks. LMWH	Deliver. *
* Risk of Thrombosis	*	LMWH All over till		Delivery. *
* Risk of Teratogenicity	*	Warfarin All over till		Delivery *

Ventricular Septal defect (VSD)

Causes:-

- Congenital (Down).
- Myocardial Infarction
- Iatrogenic
- Trauma.

Clinical Findings:-

- Cyanosis if Eisenmenger's develops.
- Low pulse volume.
- Displace. hyperdynamic. (Thrusting Apex
- Normal S_1 S_2
- Lt parasternal syst. thrill
- Harsh pansystolic murmur on Lt lower sternal edge radiating Allover the pericardium.
- Signs of PHTN
- Signs of CHF

Complications of VSD:-

1. pulmonary HTN & Eisenmenger's.
2. LVH
3. RVH
4. CHF
5. paradoxal Embolism
6. 2ry polycythemia.
7. I.E

Investigation for VSD:-

- ECHO with Doppler
- X-ray → Lung plethora & Cardiomegaly
- ECG → RVH, LVH

Indications for closure (Percutaneous, transcatheter closure):-

- if pul. B.F > $2\frac{1}{2}$ of the systolic Bl. flow.

complicated VSD
- Congenital → if affecting growth or causing CHF
- if Associated with AR

Infective Endocarditis (I.E.):

Criteria of Diagnosis of I.E.:

* Modified Duke's Criteria
  - 2 major Criteria.
  - or 1 major & 3 minor.
  - or 5 major Criteria.

- Major Criteria:
  1. +ve Blood Culture with Typical organisms.
  2. Evidence of Endocardial involvement by ECHO (Intra-cardiac Mass, New murmur, Abscess).
- Minor Criteria:
  - Risk patient (Cardiac lesion before, recreation drug inje.)
  - Fever > 38°C.
  - Embolism evidence.
  - Immunological problems (GN, Osler's nodes, Roth's spots & Rheumatic factor)
  - +ve blood C/S with Atypical organisms.

Investigations for I.E.:

- ECHO TTE 1st then TOE → vegetations
- Blood C/S → 3 sample, 3 diff. sites & one hour apart.
- Rheumatic factor
- Urinalysis for blood & proteins.

Treatment of I.E.:

- IV antibiotics according to protocol (Empirical) & according to Blood C/S.

*** Metdlic Valve ***

AVR → Metallic click S_1 MVR → Metallic click S_1

* Follow up Investigations:.

1. Basic Investigation
2. INR
3. CXR
4. ECHO

* Treatment of Metallic valve:.

- Anticoagulation (Warfarin) → Follow up INR & Echo (TEE)
- prophylaxis of I.E (in high risk patient & high risk operation)
- Treatment of H.F

** Metallic valve with new Murmur **

Aort. Valve **Mitral Vd.**

ESM
- fuction
- panus
- Mismatch

Early diastolic
- I.E
- dehescense
- Leakage